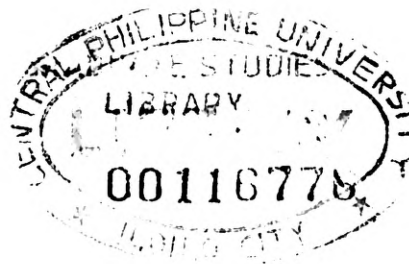


DESIGN AND EVALUATION OF A PELLET MILL  
FOR ANIMAL FEED PRODUCTION

A Project Report  
Submitted to the  
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ABSTRACT

This study was conducted to design and evaluate the performance of an electric motor-driven pellet mill for animal feed production. The designed pellet mill is composed of major parts like feed hopper, pelleting chamber, pellet roll, die plate, discharge chute, and frame. It is driven by a 1.5 Hp electric motor. It operated using a roll-type extrusion press to force the formulated feeds out of the die plate. As the pellet rolls rotated, force is also applied creating rearrangement of the particles in order to fill the voids or holes of the die plate. The pressure is increased in compression step, causing brittle particles to break and malleable particles to deform forcing them to be fed in the die and come out as pellets. The pellets then fell naturally due to impact created by the rotating die plate. The machine had an over-all dimension of 35 cm (W) by 75 cm (L) and 102 cm (H). It can produce pellets of 4 mm diameter, 1 mm long and weighed 0.138 g. The pellets produced had a bulk density of 0.51 g/cc. The machine had a capacity of 451 kg of pelletized feeds per day of operation. An interested investor needs Php50,000.00 for the procurement of the pellet mill and for the construction of its housing. Considering that the CPU-CARES Formulated Starter Mash will be used to pelletize, financial analysis indicated that it will be profitable to venture in this project. It will give a rate of return of 423% of the capital invested. The benefit derived was 16% of the cost incurred. The investment to this project including housing can be recovered in less than three months.

Based on the aforementioned findings, the pellet mill is an ideal machine that can help solve common problems on the dusty mash feeds, an efficient and user friendly machine that produces a significant amount of pellets per day. It is easy to operate and maintain making it affordable and ideal for community feed milling.